

REMARKS

Favorable reconsideration of this application in light of the preceding amendments and the following remarks is respectfully requested.

No claims having been cancelled or added, the Applicant respectfully submits that claims 1-20 remain properly under consideration in this application.

The Applicant respectfully notes that the present Action does not indicate that the drawings have been accepted by the Examiner. The Applicant respectfully requests that the Examiner's next communication include an indication as to the acceptability of the filed drawings or as to any perceived deficiencies so that the Applicant may have a full and fair opportunity to submit appropriate amendments and/or corrections to the drawings.

Rejections under 35 U.S.C. § 102

Claims 1, 2, 7-16 and 19-20 stand rejected under 35 U.S.C. § 102(b) as anticipated by Antonov's U.S. Patent No. 3,832,514 ("Antonov"). The Applicant respectfully traverse this rejection for the reasons detailed below.

The Applicant respectfully notes that Antonov teaches a spark layering process in which:

... the coating is layered by means of the butt of the layering electrode, which is rodshape and having a diameter of less than 2 mm. This is accomplished by rotating the butt around its axis, *supported at an optimal distance from the layered portion* in function of the disruptive voltage and the current. The electrical impulses are of about 15 to about 600 volts (idle running) with a duration of 1 to 10 microseconds.

Antonov, col. 1, lines 35-43 (emphasis added). The Applicant submits that Antonov's detailed description is even more explicit, providing:

The layering electrode 1 rotating around its axis by means of the electromotor 12 *is maintained at a [sic] optimal distance from the layered detail 2* by following up system 9 with the motor 10 and the gear mechanism 11.

The said distance is a function of the disruptive voltage and the current. The electric impulse generator 4 is coupled to the layered detail 2 directly and to the layering electrode 1 by means of the mercury current supplying device 14. The coating on the detail 2 is obtained as a result of the spark discharges. The quality of the coating for the given materials depends of the parameters of the electric impulses, the speed of the rotation of the layering electrode and the duration of the layering process, *as well as of the interelectrode gap (distance), maintained by the following up system 9*. At the appropriate displacement of the table 16 with the layered detail fixed on it by the mechanisms 5 and 6, controlled by the programming facility, can be obtained coatings with the desired shape and width, near to the diameter of the layering electrode 1.

Antonov, col. 3, line 64 - col. 4, line 16 (emphasis added). The Applicant respectfully contends that the patent drawings provided in Antonov are consistent with the portions of the specification text provided above and reflect a separation between the layering electrode and the surface to which the layer is being applied including. The Applicant notes, for example, FIGS. 1-3, reproduced below.

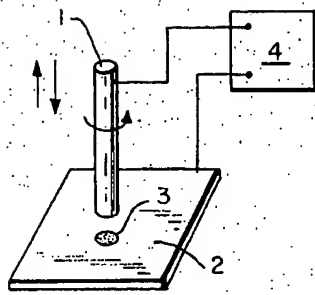


FIG. 1

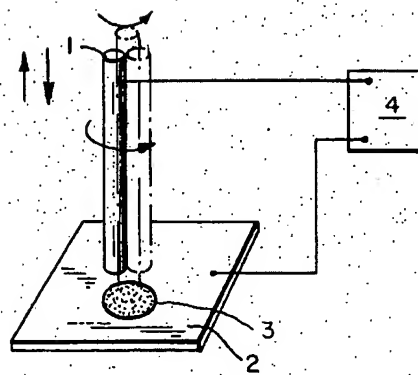


FIG. 2

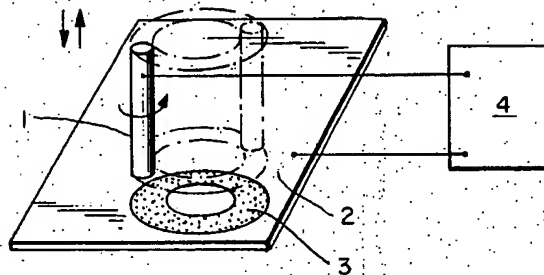


FIG. 3

The Applicant respectfully contends, therefore, that no teaching or suggestion has been identified in Antonov that would lead one of ordinary skill in the art to practice a method of welding that includes the steps of:

bringing a working surface of the consumable material *into contact* with a base surface of the base material, the working surface being *urged against the base surface by a contact force*, the contact force being applied generally along an axis substantially normal to the base surface;
moving the working surface relative to the base surface while maintaining the contact force, thereby *generating frictional heating* within the welding zone;

as recited in claim 1 (emphasis added) of the present application. The Applicant respectfully notes that each of the other independent claims, specifically claims 7, 11, 13, 16 and 19, include similar language. Because Antonov does not teach or suggest any

frictional heating contribution to the welding process, the Applicant respectfully contends that Antonov simply cannot anticipate any of the pending claims under 35 U.S.C. § 102.

The Applicant further contends that Antonov is directed to the formation of “spark layering,” *i.e.*, the deposition of a relatively thin surface layer on a base material, rather than true “welding,” which involves some melting of the base material, in accord with the present invention.

The Applicant respectfully requests, therefore, that these rejections be reconsidered and withdrawn accordingly with respect to claims 1, 2, 7-16 and 19-20.

Allowable Subject Matter

The Applicant notes with appreciation the Examiner’s indication that claims 3-6 and 17-18 are objected to as depending from a rejected base claim and would, therefore, be allowable if rewritten in independent form incorporating limitations of all included claims. For the reasons detailed above, however, the Applicant respectfully contends that the base claims are also allowable over the applied references and, consequently, the dependent claims need not be rewritten.

CONCLUSION


In view of the above remarks and amendments, the Applicants respectfully submit that each of the pending rejections has been addressed and overcome, leaving the present application in condition for allowance. A notice to that effect is respectfully requested.

If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to contact the undersigned at the number indicated.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge any underpayment or non-payment of any fees required under 37 C.F.R. §§ 1.16 or 1.17, or credit any overpayment of such fees, to Deposit Account No. 08-0750, including, in particular, extension of time fees.

Very truly yours,

HARNESS, DICKEY & PIERCE, P.L.C.

By: 
Gregory P. Brummett
Reg. No. 41,646

P.O. Box 8910
Reston, VA 20195
(703) 668-8034

GPB/gpb